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**Abstract of The Disclosure**

An apparatus is disclosed for performing high speed welding of two or more materials. The apparatus includes an outer vessel having an inner surface and a central axis. At least one inner vessel is positioned within the outer vessel and adapted to receive at least two materials to be subjected to a bonding or welding process. A drive system causes the inner vessel to rotate with respect to the outer vessel. The apparatus is designed to inhibit the formation of an oxidation layer on the materials during rotation. In one embodiment, the oxidation layer is inhibited by creating a vacuum within the inner vessel. In another embodiment, the inner vessel is filled with a gas which inhibits formation of an oxide layer on the materials. A method for high speed welding is also disclosed.

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